

CLAIMS

1. A resource router including a first processing module (1, 19) adapted to route primary resources as a function of instructions received, inputs (2) adapted to feed said first processing module (1, 19) with primary resources, outputs (3) adapted to collect primary resources switched by said first processing module (1, 19), and control means (15) adapted to control adding secondary resources to and/or dropping secondary resources from some of said received primary resources,

which router is characterized in that it includes:

- a second processing module (6, 20) adapted to process secondary resources to be added or dropped having a finer granularity than the primary resources; and
- coupling means (9) including a drop bus (8) and/or an add bus (7) and adapted, on the instructions of the control means (15):

- to drop either the whole of a primary resource arriving at one of said inputs (2) and/or outputs (3) or a portion thereof to feed said second processing module (6, 20), and/or
- to add a secondary resource processed by said second processing module to a primary resource received at one of said inputs (2) and/or outputs (3) and in transit to a common destination.

2. A router according to claim 1, characterized in that said coupling means (9) include a first multiplicity of first passive combination and/or separation elements (10, 10') each coupled to a bus channel (7, 8), a second multiplicity of second passive combination and/or separation elements (11, 11') each coupled to an input (2) or to an output (3), and groups of switching elements (12, 12') each coupled to a group of channels of a bus (7, 8) via said associated first passive element (10, 10') and to an input (2) or to an output (3) via said associated second passive element (11, 11').

3. A router according to claim 1, characterized in that said first processing module (1) is of "packet switching" type.

5 4. A router according to claim 3, characterized in that said second processing module (6) comprises a memory adapted to store data packets forming secondary resources to be added to primary resources received in the form of bursts or frames of data packets or dropped from primary
10 resources received in the form of bursts or frames of data packets.

5. A router according to claim 4, characterized in that said memory (6) is of "shared" type.

15 6. A router according to claim 4, characterized in that said coupling means (9) are adapted to add said dropped data packet at the end of said received burst or at a reserved location of said received data packet frame.

20 7. A router according to claim 1, characterized in that said first processing module (19) is of "wavelength-band switching" type.

25 8. A router according to claim 1, characterized in that said first processing module (19) is of "wavelength switching" type.

30 9. A router according to claim 7, characterized in that said second processing module (20) comprises wavelength switching means adapted to receive from said coupling means (9) a wavelength dropped from said received primary resources and/or to process a wavelength to be added by said coupling means (9) to a primary resource.

35 10. A router according to claim 8, characterized in that said second processing module (6) is adapted to receive

data packets constituting secondary resources to be added
by said coupling means (9) to a wavelength constituting a
received primary resource and to recover data packets
constituting secondary resources dropped by said coupling
5 means (9) from at least one wavelength constituting a
received primary resource.